## **EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1129	((546/234) or (546/212) or (546/214)).CCLS.	US-PGPUB; USPAT	OR	OFF	2007/05/11 19:36
L2	59	1 and benzamide and phenyl and piperidin	US-PGPUB; USPAT	OR	OFF	2007/05/11 19:37
L3	156	(brown adj william.inv.)	US-PGPUB	OR	OFF	2007/05/11 19:38
L4	19	(griffin adj andrew.inv.)	US-PGPUB	OR	OFF	2007/05/11 19:41
L5	156	(brown adj william.inv.)	US-PGPUB	OR	OFF	2007/05/11 19:41

5/11/07 7:42:06 PM Page 1

```
chain nodes :
                         12
                             14
                                15
                                     16
                                        19
                                            20
                                                21
                                                    22
   1 2 3 4
             5
                  10
                      11
ring nodes :
                      28
   23 24 25 26 27
chain bonds :
   1-3 2-4 3-5 4-5
                      5-10 10-11 10-12
                                         12-14
                                                14-15 14-16 16-19 19-20
   20-21 20-22 22-25
ring bonds :
          23-28 24-25 25-26 26-27
                                     27-28
   23-24
exact/norm bonds :
                             20-21
    5-10 10-11 14-15 19-20
exact bonds :
   1-3 2-4 3-5 4-5 10-12 12-14 14-16 16-19 20-22 22-25
normalized bonds :
         23-28 24-25 25-26 26-27 27-28
   23-24
isolated ring systems :
   containing 15 : 23 :
Match level :
   1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 10:CLASS 11:CLASS 12:Atom
   14:CLASS 15:Atom 16:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:Atom
   24:Atom 25:Atom 26:Atom 27:Atom 28:Atom
Generic attributes :
   12:
                         : Unsaturated
   Saturation
   Type of Ring System
                         : Monocyclic
   15:
   Saturation
                         : Saturated
   Number of Carbon Atoms : less than 7
```

Number of Hetero Atoms : Exactly 1

: Monocyclic

: Unsaturated

Type of Ring System

16:

Saturation

C:\Documents and Settings\brobinson1\My Documents\stnweb\Queries\artrtrl.str

Number of Carbon Atoms : less than 7 \*Type of Ring System : Monocyclic

Element Count :
Node 12: Limited
C,C6

Node 15: Limited

C,C5 N,N1

Node 16: Limited

C,C6

Connecting via Winsock to STN

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Welcome to STN International! Enter x:x
LOGINID:ssspta1612bxr
PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * * * Welcome to STN International
NEWS 1 Web Page for STN Seminar Schedule
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Web Page for STN Seminar Schedule - N. America
NEWS
                CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS
        JAN 08
     2
                CA/CAplus Company Name Thesaurus enhanced and reloaded
NEWS
        JAN 16
     3
                IPC version 2007.01 thesaurus available on STN
NEWS
         JAN 16
                WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
     5
        JAN 16
NEWS
                CA/CAplus updated with revised CAS roles
        JAN 22
NEWS
                CA/CAplus enhanced with patent applications from India
         JAN 22
NEWS
     7
                PHAR reloaded with new search and display fields
NEWS 8
        JAN 29
                CAS Registry Number crossover limit increased to 300,000 in
        JAN 29
NEWS 9
                multiple databases
                PATDPASPC enhanced with Drug Approval numbers
NEWS 10 FEB 15
                RUSSIAPAT enhanced with pre-1994 records
NEWS 11
        FEB 15
                KOREAPAT enhanced with IPC 8 features and functionality
NEWS 12 FEB 23
NEWS 13 FEB 26 MEDLINE reloaded with enhancements
NEWS 14 FEB 26 EMBASE enhanced with Clinical Trial Number field
NEWS 15 FEB 26 TOXCENTER enhanced with reloaded MEDLINE
NEWS 16 FEB 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements
        FEB 26 CAS Registry Number crossover limit increased from 10,000
NEWS 17
                 to 300,000 in multiple databases
                WPIDS/WPIX enhanced with new FRAGHITSTR display format
NEWS 18 MAR 15
NEWS 19 MAR 16 CASREACT coverage extended
NEWS 20 MAR 20 MARPAT now updated daily
NEWS 21 MAR 22 LWPI reloaded
NEWS 22 MAR 30 RDISCLOSURE reloaded with enhancements
NEWS 23 APR 02 JICST-EPLUS removed from database clusters and STN
NEWS 24 APR 30 GENBANK reloaded and enhanced with Genome Project ID field
NEWS 25 APR 30 CHEMCATS enhanced with 1.2 million new records
NEWS 26 APR 30 CA/CAplus enhanced with 1870-1889 U.S. patent records
                INPADOC replaced by INPADOCDB on STN
        APR 30
NEWS 27
                New CAS web site launched
NEWS 28 MAY 01
                CA/CAplus Indian patent publication number format defined
NEWS 29 MAY 08
             NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
NEWS EXPRESS
```

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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NEWS IPC8 For general information regarding STN implementation of IPC 8

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FILE 'HOME' ENTERED AT 16:32:10 ON 11 MAY 2007

=> file reg
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 16:32:20 ON 11 MAY 2007 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 10 MAY 2007 HIGHEST RN 934586-26-2 DICTIONARY FILE UPDATES: 10 MAY 2007 HIGHEST RN 934586-26-2

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TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Documents and Settings\brobinson1\My
Documents\stnweb\Queries\artrtrl.str

L1 STRUCTURE UPLOADED

=> d 11
L1 HAS NO ANSWERS
L1 STR

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

Structure attributes must be viewed using STN Express query preparation.

=> s 11 SAMPLE SEARCH INITIATED 16:38:11 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 43154 TO ITERATE

4.6% PROCESSED 2000 ITERATIONS

1 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS:

850675 TO 875485

PROJECTED ANSWERS:

153 TO 709

L2

1 SEA SSS SAM L1

=> s l1 full
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 171.65 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 16:38:18 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 863369 TO ITERATE

96.8% PROCESSED 835711 ITERATIONS

10 ANSWERS

100.0% PROCESSED 863369 ITERATIONS

10 ANSWERS

SEARCH TIME: 00.00.28

L3 10 SEA SSS FUL L1

=> file hcaplus
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 176.60 176.81

FULL ESTIMATED COST

FILE 'HCAPLUS' ENTERED AT 16:38:59 ON 11 MAY 2007 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1907 - 11 May 2007 VOL ISS ISS
FILE LAST UPDATED: 10 May 2007 (20070510/ED)
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FILE COVERS 1907 - 11 May 2007 VOL 146 ISS 21 FILE LAST UPDATED: 1 May 2007 (20070501/ED)

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This file contains CAS Registry Numbers for easy and accurate

=> s 13

L4 2 L3

 $\Rightarrow$  d 14, ibib abs hitstr, 1-2

L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:

2004:1016017 HCAPLUS

DOCUMENT NUMBER:

142:6430

TITLE:

Preparation of diarylmethylidene piperidine derivatives as opioid  $\delta$  receptor ligands for

treating pain, anxiety and functional gastrointestinal

disorders

INVENTOR(S):

PATENT ASSIGNEE(S):

SOURCE:

Brown, William L.; Griffin, Andrew; Jin, Shujuan Astrazeneca AB, Swed.; Astrazeneca UK Limited

PCT Int. Appl., 131 pp. CODEN: PIXXD2

DOCUMENT TYPE:

LANGUAGE:

Patent English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.				KIN	IND DATE			APPLICATION NO.				DATE						
WO 2004101522			A1 20041125			WO 2004-GB2074				20040513								
								ΑZ,										
								DK,										
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	ΚE,	KG,	ΚP,	KR,	ΚZ,	LC,	
		LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NA,	NI,	
		NO,	NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	
								UA,										
	RW:							MZ,										
								ТJ,										
								HU,										
								CG,										
		SN,	TD,	TG														
ΑU	2004	2386	18		A1		2004	1125		AU 2	004-	2386	18		. 2	0040	513	
CA	2525	860			A1		2004	1125		CA 2	004-	2525	860		2	0040	513	
EP	1641	757			A1		2006	0405		EP 2	004-	7326	65		2	0040	513	
	R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	ΙT,	LI,	LU,	NL,	SE,	MC,	PT,	
		IE,	SI,	LT,	LV,	FI,	RO,	MK,	CY,	AL,	TR,	BG,	CZ,	EE,	HU,	PL,	SK,	HR
BR	2004	0103	47		Α		2006	0530		BR 2	004-	1034	7		2	0040	513	
CN	1823	040			Α		2006	0823		CN 2	004-	8002	0330		2	0040	513	
JP	JP 2007503457				$\mathbf{T}$		2007	0222	CN 2004-80020330 JP 2006-530500			20040513						
US	2007	0999	57		A1		2007	0503					80					
NO	2005	0059	98		Α		2006	0213		NO 2	005-	5998			2	0051	216	
RIORIT	ORITY APPLN. INFO.:							SE 2003-1444				A 20030516						
										SE 2	004-	24		ž	A 2	0040	109	
									1	WO 2	004-	GB20	74	1	₩ 2	0040	513	
							_											

OTHER SOURCE(S): GI

MARPAT 142:6430

Ι

CN

The title compds. [I; Rl = H, (un)substituted alkyl, aryl, etc.; R2-R4 = H, (un)substituted alkyl, cycloalkyl; R7 = H, OH, alkyl, etc.] which are useful in therapy, in particular in the management of pain, were prepared E.g., a multi-step synthesis of I [Rl = H; R2, R3 = Et; R4 = COPh; R7 = H], starting from Me 4-(bromomethyl)benzoate, was given. The compds. I were found to be active toward human δ receptors. Generally, for most of the compds. I the IC50 values are in the range of 0.48 nM to 17.9 nM. The pharmaceutical composition comprising the compound I is disclosed.
IT 798549-18-5P 798549-19-6P 798549-23-2P 798549-24-3P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of diarylmethylidene piperidine derivs. as opioid  $\delta$  receptor ligands for treating pain, anxiety and functional gastrointestinal disorders)

RN 798549-18-5 HCAPLUS

Benzeneacetamide, N-[2-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]- (9CI) (CA INDEX NAME)

RN 798549-19-6 HCAPLUS

CN Benzeneacetamide, N-[2-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]-, trifluoroacetate (10:11) (9CI) (CA INDEX NAME)

CM 1

CRN 798549-18-5 CMF C31 H35 N3 O2

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 798549-23-2 HCAPLUS

CN Benzenepropanamide, N-[2-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]- (9CI) (CA INDEX NAME)

RN 798549-24-3 HCAPLUS

CN Benzenepropanamide, N-[2-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]-, trifluoroacetate (5:7) (9CI) (CA INDEX NAME)

CM 1

CRN 798549-23-2

CMF C32 H37 N3 O2

$$\begin{array}{c} Ph-CH_2-CH_2-C \\ \\ O \\ Et_2N-C \\ \end{array}$$

. 2 CM

CRN 76-05-1 CMF C2 H F3 O2

REFERENCE COUNT:

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS 3 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:

2004:412920 HCAPLUS

DOCUMENT NUMBER:

140:423590

TITLE:

Preparation of 4-(phenylpiperidin-4-

ylidenemethyl) benzamides for treatment of pain,

anxiety, or gastrointestinal disorders

INVENTOR(S):

Brown, William; Griffin, Andrew

PATENT ASSIGNEE(S):

Astrazeneca AB, Swed.

SOURCE:

PCT Int. Appl., 96 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND DATE	APPLICATION NO.	DATE			
WO 2004041784	A1 20040521	WO 2003-SE1705	20031105			
W: AE, AG, AL,	AM, AT, AU, AZ,	BA, BB, BG, BR, BY, BZ,	CA, CH, CN,			
		DZ, EC, EE, EG, ES, FI,				
GH, GM, HR,	HU, ID, IL, IN,	IS, JP, KE, KG, KP, KR,	KZ, LC, LK,			
LR. LS. LT.	LU, LV, MA, MD,	MG, MK, MN, MW, MX, MZ,	NI, NO, NZ,			

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OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
              TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
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                                   20040607
                                            AU 2003-274885
                                                                         20031105
                            Α1
     AU 2003274885
                                   20050831 EP 2003-759165
                                                                         20031105
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                                   20070411
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                                               JP 2004-549774
                                                                         20031105
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                                   20060511
     JP 2006514617
                                               US 2005-533838
                                                                         20050504
     US 2006014789
                                   20060119
                            A1
                                                                     A 20021107
                                                SE 2002-3301
PRIORITY APPLN. INFO .: .
                                                                    W 20031105
                                                WO 2003-SE1705
                           MARPAT 140:423590
OTHER SOURCE(S):
GI
```

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

```
Title compds. I [wherein R1 = (un)substituted alkyl, cycloalkyl(alkyl),
AB
     (hetero)aryl, R8CO, R8SO2, R8SO, R8NHCO, R8CS, or R8NHCS; ; R2 = H or
     (un) substituted alkyl; R3 = H or (un) substituted alkoxycarbonyl, alkyl, or
     cycloalkyl(alkyl); R8 = (un)substituted alkyl, (hetero)aryl(alkyl), or
     cycloalkyl(alkyl); or pharmaceutically acceptable salts thereof] were
     prepared as opioid \delta receptor ligands. For example, reaction of
     4-(bromomethyl)benzoic acid Me ester with P(OMe)3, followed by addition of
     1-(tert-butoxycarbonyl)-4-piperidone in the presence of LDA in THF, gave
     4-(4-methoxycarbonylbenzylidene)piperidine-1-carboxylic acid tert-Bu ester
     (35%). Addition of Br2 (78%) and reaction with NaOH in MeOH provided
     4-[bromo(4-carboxyphenyl)methylene]piperidine-1-carboxylic acid tert-Bu
     ester (87%). Conversion to the benzoyl chloride with iso-Bu chloroformate
     and amidation (73%) with Et2NH in the presence of TEA in CH2Cl2, followed
     by coupling with 3-aminophenylboronic acid using Pd(PPh3)4 and Na2CO3 in
     toluene/EtOH/H2O afforded N,N-diethyl-4-[(3-aminophenyl)(piperidin-4-
     ylidene)methyl]benzamide (97%). Alkylation of the amine with benzaldehyde
     and NaBH(OAc)3 in 1,2-dichloroethane gave II. In binding assays using
     human 293S cells expressing cloned human opioid receptors and neomycin
     resistance, most compds. of the invention exhibited activity toward the
     8 receptor with IC50 values in the range of 0.14 nM - 31.2 nM.
     Exemplified compds. also showed some activity toward the \kappa and \mu
     receptors with IC50 values in the ranges of 36 nM - 9680 nM and 3 nM -
     5975 nM, resp. Thus, I and their pharmaceutical compns. are useful in
     therapy, in particular for the treatment of gastrointestinal disorders,
     anxiety, or pain (no data).
ΙT
```

692245-61-7P 692245-73-1P 692245-77-5P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

( $\delta$  receptor agonist; preparation of (phenylpiperidinylidenemethyl)benz amides as  $\delta$  receptor agonists for treatment of pain, anxiety, or gastrointestinal disorders)

692245-61-7 HCAPLUS RN

Benzeneacetamide, N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-CN piperidinylidenemethyl]phenyl]-, trifluoroacetate (5:9) (9CI) NAME)

CM 1

CRN 692245-59-3 CMF C31 H35 N3 O2

$$Ph-CH_2-C-NH$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 692245-73-1 HCAPLUS

CN Benzeneacetamide, 2-chloro-N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]-, trifluoroacetate (2:3) (9CI) (CA INDEX NAME)

CM 1

CRN 692245-71-9 CMF C31 H34 C1 N3 O2

$$\begin{array}{c|c} & & & \\ & & \\ Et_2N-C & & \\$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 692245-77-5 HCAPLUS

CN Benzeneacetamide, 3-chloro-N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]-, trifluoroacetate (5:8) (9CI) (CA INDEX NAME)

CM 1

CRN 692245-75-3 CMF C31 H34 C1 N3 O2

$$\begin{array}{c|c} C & H & N \\ \hline \\ Et_2N-C & O \\ \hline \\ C & NH-C-CH_2 \\ \hline \\ C & CH_2 \\ C & CH_2 \\ \hline \\ C & CH_$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 692245-59-3 HCAPLUS

Benzeneacetamide, N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]- (9CI) (CA INDEX NAME)

CN

RN 692245-71-9 HCAPLUS

CN Benzeneacetamide, 2-chloro-N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ &$$

RN 692245-75-3 HCAPLUS

CN Benzeneacetamide, 3-chloro-N-[3-[[4-[(diethylamino)carbonyl]phenyl]-4-piperidinylidenemethyl]phenyl]- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} C & & \\ C & &$$

=> file caold TOTAL SINCE FILE COST IN U.S. DOLLARS SESSION **ENTRY** 13.14 189.95 FULL ESTIMATED COST SINCE FILE TOTAL DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) ENTRY SESSION -1.56 -1.56CA SUBSCRIBER PRICE

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FILE COVERS 1907-1966

FILE LAST UPDATED: 01 May 1997 (19970501/UP)

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This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

## => d his

L1

(FILE 'HOME' ENTERED AT 16:32:10 ON 11 MAY 2007)

FILE 'REGISTRY' ENTERED AT 16:32:20 ON 11 MAY 2007

STRUCTURE UPLOADED

L2 1 S L1

L3 10 S L1 FULL

FILE 'HCAPLUS' ENTERED AT 16:38:59 ON 11 MAY 2007

L4 2 S L3

FILE 'CAOLD' ENTERED AT 16:39:14 ON 11 MAY 2007

=> s 13

L5 0 L3